

## WEST Search History

DATE: Friday, January 14, 2005

<u>Hide?</u>	<u>Set Name</u>	<u>Query</u>	<u>Hit Count</u>
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*DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI; PLUR=NO; OP=OR*

<input type="checkbox"/>	L22	L21 and reflection	29
<input type="checkbox"/>	L21	l19 and (polymer near5 synthesis)	66
<input type="checkbox"/>	L20	(sensor adj matrix) and L19	1
<input type="checkbox"/>	L19	L18 and uv	289
<input type="checkbox"/>	L18	l15 and (ccd)	609
<input type="checkbox"/>	L17	6271957.pn.	2
<input type="checkbox"/>	L16	L15 near20(micro adj mirror adj array)	8
<input type="checkbox"/>	L15	(array\$ near20 photolithograph\$\$\$\$)	4734
<input type="checkbox"/>	L14	l11 and (reflection near matrix)	4
<input type="checkbox"/>	L13	L11 and l10	1
<input type="checkbox"/>	L12	L11 and l6	0
<input type="checkbox"/>	L11	(illumination near matrix)	115
<input type="checkbox"/>	L10	(light near sensor near matrix)	36
<input type="checkbox"/>	L9	L8 and l6	0
<input type="checkbox"/>	L8	ccd adj matrix	624
<input type="checkbox"/>	L7	ccd matrix	738652
<input type="checkbox"/>	L6	(micro near mirror near array)	491
<input type="checkbox"/>	L5	digital near optical near chemistry	15

*DB=USPT; PLUR=NO; OP=OR*

<input type="checkbox"/>	L4	5405783.pn.	1
<input type="checkbox"/>	L3	6066448.pn.	1
<input type="checkbox"/>	L2	6066448	19
<input type="checkbox"/>	L1	6586211.pn.	1

END OF SEARCH HISTORY

(FILE 'HOME' ENTERED AT 13:47:19 ON 14 JAN 2005)

FILE 'STNGUIDE' ENTERED AT 13:47:26 ON 14 JAN 2005

FILE 'HOME' ENTERED AT 13:47:31 ON 14 JAN 2005

FILE 'MEDLINE, CAPLUS, SCISEARCH, BIOSIS' ENTERED AT 13:47:42 ON 14 JAN 2005

L1 216 S MICROMIRROR ARRAY#

L2 19 S PHOTOLITHOGRAPH##### AND L1

FILE 'STNGUIDE' ENTERED AT 13:49:10 ON 14 JAN 2005

FILE 'MEDLINE, CAPLUS, SCISEARCH, BIOSIS' ENTERED AT 13:56:55 ON 14 JAN 2005

L3 12 DUPLICATE REMOVE L2 MEDLINE (7 DUPLICATES REMOVED)

FILE 'STNGUIDE' ENTERED AT 14:01:27 ON 14 JAN 2005

FILE 'MEDLINE, CAPLUS, SCISEARCH, BIOSIS' ENTERED AT 14:03:50 ON 14 JAN 2005

E STAHLER CORD F/AU

L4 6 S E2-E4

FILE 'STNGUIDE' ENTERED AT 14:05:47 ON 14 JAN 2005

FILE 'MEDLINE, CAPLUS, BIOSIS' ENTERED AT 14:07:31 ON 14 JAN 2005

FILE 'STNGUIDE' ENTERED AT 14:07:32 ON 14 JAN 2005

FILE 'MEDLINE, CAPLUS, SCISEARCH, BIOSIS' ENTERED AT 14:09:31 ON 14 JAN 2005

E STAHLER PEER F/AU

L5 15 S E1-E4

L6 11 DUPLICATE REMOVE L5 (4 DUPLICATES REMOVED)

FILE 'STNGUIDE' ENTERED AT 14:11:35 ON 14 JAN 2005

FILE 'MEDLINE, CAPLUS, SCISEARCH, BIOSIS' ENTERED AT 14:15:19 ON 14 JAN 2005

E MULLER MANFRED/AU

L7 0 S E3-EE7

L8 71 S E3-E7

L9 67 DUPLICATE REMOVE L8 (4 DUPLICATES REMOVED)

L10 0 S L9 AND MICROMIRROR

L11 5 S L9 AND ARRAY#

FILE 'STNGUIDE' ENTERED AT 14:17:47 ON 14 JAN 2005

FILE 'MEDLINE, CAPLUS' ENTERED AT 14:18:24 ON 14 JAN 2005

FILE 'STNGUIDE' ENTERED AT 14:18:24 ON 14 JAN 2005

FILE 'MEDLINE, CAPLUS' ENTERED AT 14:18:44 ON 14 JAN 2005

E LINDNER HANS/AU

L12 176 S E3-E12

L13 1 S L12 AND ARRAY#

FILE 'STNGUIDE' ENTERED AT 14:20:04 ON 14 JAN 2005

L4 ANSWER 1 OF 6 MEDLINE on STN  
AN 2003548843 MEDLINE  
DN PubMed ID: 14627841  
TI Validation of a novel, fully integrated and flexible microarray benchtop facility for gene expression profiling.  
AU Baum Michael; Bielau Simone; Rittner Nicole; Schmid Kathrin; Eggelbusch Kathrin; Dahms Michael; Schlauersbach Andrea; Tahedl Harald; Beier Markus; Guimil Ramon; Scheffler Matthias; Hermann Carsten; Funk Jorg-Michael; Wixmerten Anke; Rebscher Hans; Honig Matthias; Andreae Claas; Buchner Daniel; Moschel Erich; Glathe Andreas; Jager Evelyn; Thom Marc; Greil Andreas; Bestvater Felix; Obermeier Frank; Burgmaier Josef; Thome Klaus; Weichert Sigrid; Hein Silke; Binnewies Tim; Foitzik Volker; Muller Manfred; **Stahler Cord Friedrich**; Stahler Peer Friedrich  
CS febit ag, Kafertaler Strasse 190, 68167 Mannheim, Germany..  
michael.baum@febit.de  
SO Nucleic acids research, (2003 Dec 1) 31 (23) e151.  
Journal code: 0411011. ISSN: 1362-4962.  
CY England: United Kingdom  
DT Journal; Article; (JOURNAL ARTICLE)  
LA English  
FS Priority Journals  
EM 200406  
ED Entered STN: 20031121  
Last Updated on STN: 20040701  
Entered Medline: 20040630  
AB Here we describe a novel microarray platform that integrates all functions needed to perform any array-based experiment in a compact instrument on the researcher's laboratory benchtop. Oligonucleotide probes are synthesized *in situ* via a light-activated process within the channels of a three-dimensional microfluidic reaction carrier. Arrays can be designed and produced within hours according to the user's requirements. They are processed in a fully automatic workflow. We have characterized this new platform with regard to dynamic range, discrimination power, reproducibility and accuracy of biological results. The instrument detects sample RNAs present at a frequency of 1:100 000. Detection is quantitative over more than two orders of magnitude. Experiments on four identical arrays with 6398 features each revealed a mean coefficient of variation (CV) value of 0.09 for the 6398 unprocessed raw intensities indicating high reproducibility. In a more elaborate experiment targeting 1125 yeast genes from an unbiased selection, a mean CV of 0.11 on the fold change level was found. Analyzing the transcriptional response of yeast to osmotic shock, we found that biological data acquired on our platform are in good agreement with data from Affymetrix GeneChips, quantitative real-time PCR and--albeit somewhat less clearly--to data from spotted cDNA arrays obtained from the literature.  
CT Check Tags: Support, Non-U.S. Gov't  
Automation: IS, instrumentation  
\*Gene Expression Profiling: IS, instrumentation  
Genes, Fungal: GE, genetics  
\*Oligonucleotide Array Sequence Analysis: IS, instrumentation  
RNA, Fungal: AN, analysis  
RNA, Fungal: GE, genetics  
RNA, Messenger: AN, analysis  
RNA, Messenger: GE, genetics  
Reproducibility of Results  
Saccharomyces cerevisiae: GE, genetics  
Sensitivity and Specificity  
CN 0 (RNA, Fungal); 0 (RNA, Messenger)

L11 ANSWER 1 OF 5 MEDLINE on STN  
AN 2003548843 MEDLINE  
DN PubMed ID: 14627841  
TI Validation of a novel, fully integrated and flexible microarray benchtop facility for gene expression profiling.  
AU Baum Michael; Bielau Simone; Rittner Nicole; Schmid Kathrin; Eggelbusch Kathrin; Dahms Michael; Schlauersbach Andrea; Tahedl Harald; Beier Markus; Guimil Ramon; Scheffler Matthias; Hermann Carsten; Funk Jorg-Michael; Wixmerten Anke; Rebscher Hans; Honig Matthias; Andreae Claas; Buchner Daniel; Moschel Erich; Glathe Andreas; Jager Evelyn; Thom Marc; Greil Andreas; Bestvater Felix; Obermeier Frank; Burgmaier Josef; Thome Klaus; Weichert Sigrid; Hein Silke; Binnewies Tim; Foitzik Volker; Muller Manfred; Stahler Cord Friedrich; Stahler Peer Friedrich  
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SO Nucleic acids research, (2003 Dec 1) 31 (23) e151.  
Journal code: 0411011. ISSN: 1362-4962.  
CY England: United Kingdom  
DT Journal; Article; (JOURNAL ARTICLE)  
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FS Priority Journals  
EM 200406  
ED Entered STN: 20031121  
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AB Here we describe a novel microarray platform that integrates all functions needed to perform any **array**-based experiment in a compact instrument on the researcher's laboratory benchtop. Oligonucleotide probes are synthesized *in situ* via a light-activated process within the channels of a three-dimensional microfluidic reaction carrier. **Arrays** can be designed and produced within hours according to the user's requirements. They are processed in a fully automatic workflow. We have characterized this new platform with regard to dynamic range, discrimination power, reproducibility and accuracy of biological results. The instrument detects sample RNAs present at a frequency of 1:100 000. Detection is quantitative over more than two orders of magnitude. Experiments on four identical **arrays** with 6398 features each revealed a mean coefficient of variation (CV) value of 0.09 for the 6398 unprocessed raw intensities indicating high reproducibility. In a more elaborate experiment targeting 1125 yeast genes from an unbiased selection, a mean CV of 0.11 on the fold change level was found. Analyzing the transcriptional response of yeast to osmotic shock, we found that biological data acquired on our platform are in good agreement with data from Affymetrix GeneChips, quantitative real-time PCR and--albeit somewhat less clearly--to data from spotted cDNA **arrays** obtained from the literature.  
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Automation: IS, instrumentation  
\*Gene Expression Profiling: IS, instrumentation  
Genes, Fungal: GE, genetics  
\*Oligonucleotide Array Sequence Analysis: IS, instrumentation  
RNA, Fungal: AN, analysis  
RNA, Fungal: GE, genetics  
RNA, Messenger: AN, analysis  
RNA, Messenger: GE, genetics  
Reproducibility of Results  
Saccharomyces cerevisiae: GE, genetics  
Sensitivity and Specificity  
CN 0 (RNA, Fungal); 0 (RNA, Messenger)

L13 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2005 ACS on STN  
AN 2000:253917 CAPLUS  
DN 133:144342  
ED Entered STN: 20 Apr 2000  
TI Trends and solutions in microarray production  
AU Kuhn, Claus; Dobler, Hannes; Klumpp, Bernhard; **Lindner, Hans**  
CS Fraunhofer Institut fur Produktionstechnik und Automatisierung, Stuttgart,  
Germany  
SO Bioforum International (2000), 4(1), 30-31  
CODEN: BINTFQ; ISSN: 1434-2693  
PB GIT Verlag GmbH  
DT Journal; General Review  
LA English  
CC 1-0 (Pharmacology)  
Section cross-reference(s): 3, 9, 20, 47, 63  
AB A review with 30 refs. In the pharmaceutical industry a large amount of  
money is spent for preclin. and clin. research. The development of one  
drug easily costs millions of dollars because hundreds and thousands of  
tests are being conducted. The demand for high-throughput and cost  
effective anal. of complex mixts. has led technol. toward the development  
and application of compact, high-d. **array** devices. So called  
biochips have numerous locations of different probes (=**arrays**),  
e. g. DNA-fragments, which allows for a multiparallel anal. of a sample.  
The information about the sequence of the DNA-fragment is related to the  
geometric location of the sample. Biochips are applied in gene  
expression, DNA-sequencing, immuno-diagnostics etc. The advantages of  
these biochips are: they require less reagent volume, they make anal.  
processes run faster because of their smaller size and they give the  
opportunity to implement more sensitive detection methods. By this they  
reduce costs, save time and improve quality. Different technologies are  
applied to create high d. **arrays** on the surface of a biochip.  
As printing technol. is very flexible, and promises a high step yield, the  
focus is on this technol. To create these high d. **arrays**  
certain requirements must be met concerning printing technol., handling  
technol., material and informational flow and environmental conditioning.  
ST review DNA microarray biochip prodn  
IT Biotechnology  
    (biochips; trends and solns. in microarray production)  
IT DNA  
    RL: BMF (Bioindustrial manufacture); BIOL (Biological study); PREP  
    (Preparation)  
    (microarrays; trends and solns. in microarray production)  
IT Drug screening  
Genetic mapping  
Pharmaceutical industry  
    (trends and solns. in microarray production)  
RE.CNT 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD  
RE  
(1) Dobler, H; Trends and Solutions in Microarray Production 1999  
(2) Karri, L; Analytical Chemistry 1998, V70(7)  
(3) Marshall, A; Nature Biotechnology 1998, V16, P27 CAPLUS  
(4) Muller, M; TopSpot - A new Method for the Fabrication of BioChips 1999

L3 ANSWER 6 OF 12 CAPLUS COPYRIGHT 2005 ACS on STN DUPLICATE 2  
AN 2003:145559 CAPLUS  
DN 139:257447  
ED Entered STN: 26 Feb 2003  
TI Protein patterning by virtual mask **photolithography** using a  
**micromirror array**  
AU Lee, Kook-Nyung; Shin, Dong-Sik; Lee, Yoon-Sik; Kim, Yong-Kweon  
CS School of Electrical Engineering and Computer Science, Seoul National  
University, S. Korea  
SO Journal of Micromechanics and Microengineering (2003), 13(1), 18-25  
CODEN: JMMIEZ; ISSN: 0960-1317  
PB Institute of Physics Publishing  
DT Journal  
LA English  
CC 9-1 (Biochemical Methods)  
AB The successful development of biosensors and protein chips requires a method for protein patterning on a solid surface. We describe a virtual mask photolithog. method for the surface patterning of proteins on a chip using a **micromirror array** (MMA) and its characterization. The excitation light was switched on or off using the MMA, and the light pattern was transferred using the pattern of switched-on mirrors. The nitroveratryloxycarbonyl (NVOC) group was utilized as a photolabile protecting group for protein patterning, so that biomols. could be immobilized on a patterned substrate. When illuminated by UV light, the photolabile protecting group was removed by a chemical reaction, and non-illuminated photolabile protecting groups protected the chip surface. Biotin was coupled only to the region where the protecting group had been removed, and so, biotin-streptavidin patterns were obtained. A two-dimensional MMA was designed and fabricated using micromachining technol. for use as a spatial light modulator. The projection system consisted of the MMA, a light source and other optical components, such as a projection lens. Fluorescein isothiocyanate was used to visualize the NVOC photo-cleavage sites and the biotin-streptavidin reaction. Parallel and quant. expts. required in the development of surface modification technol. for protein immobilization on a surface can easily be performed using this protein patterning system.  
ST protein immobilization patterning virtual mask photolithog  
**micromirror array**  
IT Protein microarray technology  
(fabrication of; protein patterning by virtual mask photolithog. using  
**micromirror array**)  
IT Proteins  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(immobilization of; protein patterning by virtual mask photolithog.  
using **micromirror array**)  
IT Mirrors  
(micro-; protein patterning by virtual mask photolithog. using  
**micromirror array**)  
IT Immobilization, molecular or cellular  
(of protein; protein patterning by virtual mask photolithog. using  
**micromirror array**)  
IT Plate glass  
RL: DEV (Device component use); USES (Uses)  
(protein immobilization on; protein patterning by virtual mask  
photolithog. using **micromirror array**)  
IT **Photolithography**  
(protein patterning by virtual mask photolithog. using  
**micromirror array**)  
IT UV radiation  
(selective photo deprotection by; protein patterning by virtual mask  
photolithog. using **micromirror array**)

IT Surface  
(surface patterning; protein patterning by virtual mask photolithog.  
using **micromirror array**)  
IT 27072-45-3D, Fluorescein isothiocyanate, conjugates with streptavidin  
RL: ARG (Analytical reagent use); ANST (Analytical study); USES (Uses)  
(for visualization of array patterning; protein patterning by virtual  
mask photolithog. using **micromirror array**)  
IT 58-85-5, Biotin 9013-20-1D, Streptavidin, conjugates with fluorescein  
isothiocyanate  
RL: ARU (Analytical role, unclassified); ANST (Analytical study)  
(protein patterning by virtual mask photolithog. using  
**micromirror array**)  
IT 158641-92-0  
RL: DEV (Device component use); USES (Uses)  
(use as protecting reagent in protein immobilization; protein  
patterning by virtual mask photolithog. using **micromirror  
array**)

RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) Ajayaghosh, A; Tetrahedron 1988, V44, P6661 CAPLUS
- (2) Bodanszky, M; Reactivity and Structure: Concepts in Organic Chemistry 1984,  
V21, P12
- (3) Buher, J; IEEE Microelectromech Syst 1997, V6, P126
- (4) Chung, S; Sensors Actuators A 1996, V54, P464
- (5) Jaecklin, V; Sensors Actuators A 1994, V43, P269 CAPLUS
- (6) Lee, K; J Micromech Microeng submitted
- (7) Lee, K; J Semicond Technol Sci 2001, V1, P132
- (8) Lee, K; SPIE 2001, P352 CAPLUS
- (9) Lispshutz, R; Biotechniques 1995, V19, P442
- (10) Pease, A; Proc Natl Acad Sci USA 1991, V91, P5022
- (11) Service, R; Science 1998, V282, P396 CAPLUS
- (12) Service, R; Science 1998, V282, P399 CAPLUS
- (13) Singh-Gasson, S; Nature Biotechnol 1999, V17, P974 CAPLUS
- (14) Storment, C; J Microelectromech Syst 1994, V3, P97
- (15) Wilchek, M; Methods in Enzymology 1990, V184, P5 CAPLUS